

ORTHOPTERA  
STUDIES IN NEARCTIC DESERT SAND DUNES

Part IV. A new *Trimerotropis* from the dunes of eastern  
New Mexico

Ernest R. Tinkham<sup>1</sup>

The new species of *Trimerotropis*, herein described, was found on the Mescalero Sands during the author's investigations on the Dune Biotae of the Great Chihuahuan Desert as a Grantee of the National Science Foundation, 1957-1960. These dunes have been more fully discussed in Part I of this study and the interested student is referred to that paper. Description of the new subspecies follows:

*Trimerotropis citrina neomexicana* n. subsp.

Differs from typical material of *T. citrina* from the type locality (Dallas, Texas) and from areas west to the Rio Grande in New Mexico and north to Nebraska by its larger size, plain isabelline tegmina which lacks the agglomeration of fasciculi typical of *citrina* and by the definite enlargement of the dental area on the posterior angle of the lateral lobes of the pronotum (see figures). Such enlargement of the posterior lobe seems especially developed in arenicolus species of *Trimerotropis* and present as great projections in the recently described *T. agrestis gracewileyae* and *T. a. barnumi* of Utah dunes. It is also observed in *T. strenua* and especially the nymphs of *T. arenacea* Rehn of the Winnemucca dunes of northern Nevada. Additional morphological features of differentiation are: the more carinate median carina of the pronotum, more definite lateral carinae on the metazona of the pronotum, the more arcuate curving black band on the wings, which in *citrina*, especially the males, crosses the wing quite transversely giving the band a somewhat angular form. Also, the Cubitus and First Anal veins are yellow throughout, thus dividing the band into two sections in the new form. In addition, the carinae of the dorsal portions of the head seem more definite and there is usually a suggestion of a median carina of the fastigium. All these features should serve to amply distinguish this new handsome race.

*Male*.—Fastigium gently declivent, rounding into the frontal costa, with strongly defined lateral carinae commencing centrally between the compound eyes, slightly divergent forward to near the front margin of the eyes, thence convergent and gently arcuate, in almost a straight line, to the frontal costa whereas in *citrina* these carinae are somewhat irregular in the proximity of the lateral foveolae. Median foveolae gently impressed, median carina of the fastigium slightly indicated. Lateral foveolae well indicated, carinate on the two front margins, rather open behind. Frontal costa gently and evenly divergent from just above the antennal scrobes to near the clypeal margin where they evanesce. Eye typical and subprominent.

<sup>1</sup> Indio, California

Antennae long. their apices extending to the bases of the caudal femora. Pronotum with median carina well defined especially on the prozona, less defined on the metazona; in profile rather flat or straight and notched by the principal sulcus at about the anterior  $2/6$ th. the second sulcus almost central on the prozona thus producing bilobation, the anterior lobe of which is slightly the longest. Shoulders of the metazona with definite lateral carinae which extend posteriorly for one half the length of the metazonal shoulders and only very slightly divergent caudally. Process of the metazona slightly acute-angled and well rounded, the margins rolled and slightly concavely arcuate. Lateral lobes of the pronotum deeper than broad, the anterior and posterior margins parallel (this feature distinguishing *neomexicana*, new subspecies from the newly described *T. agrestis gracewileyae* and *T. a. barnumi* which have these margins slightly divergent ventradly), the inferior margin of the posterior angle with a large dentate projection which is an important character distinguishing *neomexicana* from *citrina*.

COLORATION: whitish gray with scattered rust spots on head and pronotum reddish brown, thoracic sternites and abdomen tinged with yellow. Tegmina isabelline with principal veins brownish and network of veins whitish with dark brown cells in anterior two-thirds, posterior third (dorsal area in closed tegmina) brownish yellow. Wing disc yellow with strongly arcuate black band terminating at anal 14., the cubitus area is yellow throughout separating off the marginal area whereas in *citrina* the band is entire.

Apical portion of the wing hyaline with the veins of Anal 1 and 2 blackish while in *citrina* the blacking of veins in the apical portion is more considerable. Caudal femora whitish on the outer pagina with barely a trace of any dark fasciation which in *citrina* is quite definite and prominent; inner pagina deep coral red with three small blackish areas located as follows: the basal patch on the central two-fifths, an apical genicular area and a small intermediate spot. Lower sulcus deep coral red. Caudal tibiae deep coral red with the spines tipped with black and the external basal third with a whitish cloud area.

*Male Holotype*: Mescalero Sands, 44 miles east of Roswell, New Mexico on Highway #380, east margin of dunes, 12-13 September, 1959. Ernest R. Tinkham. Glogau Calliper measurements in millimeters; body length 26.9; length to apex of tegmen 36.5; pronotum 5.9 x 3.3 at shoulders; lateral lobes of pronotum 4.5 x 3.5 in breadth; tegmen 30.5; caudal femur 14.2 mm. Type deposited in the Tinkham Eremological Collection.

*Female*: much larger than male. fastigiun relatively broader but otherwise similar. Pronotal features similar but median sulcus notching shallow. Lateral carina of metazona more defined than in male and tooth on inferior margin relatively larger. Tegmina and oviposter typical of genus.

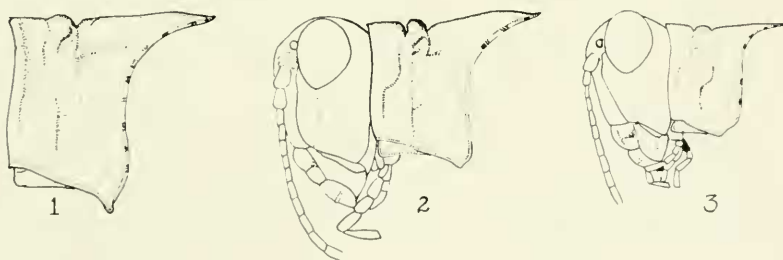
COLORATION: closely similar to the male, the breadth of the black

wing band slightly more than 1/5th the length of the wing and about equal to one-half the breadth of the disc.

*Female Allotype*: same locality as the Holotype but collected 16-17 July, 1959. Measurements in millimeters: body length 34.6; length to apex of tegmen 48.0; pronotum 7.5 x 5.8 in breadth at the shoulders; lateral lobes of the pronotum 6.7 x 4.7 in breadth; tegmen 39.5; caudal femur 19.5. Allotype in the Tinkham Eremological Collection.

*Male paratypes*: 8, 6 from the same locality and date as the Holotype, 2 ♂s from Monohans Sand Hills State Park on July 7 and Sept. 14, 1959. Range in measurements in millimeters: body length 26.8—31.2; length to apices of tegmina 33.0—39.9; Pronotum 3.9—4.9 x 4.1 to 4.5; lateral lobes of the pronotum 4.3—5.0 x 3.2 x 3.9 in breadth; tegmina 28.0—33.3; caudal femora 15.4—16.2 mm. Paratypes will be deposited in the major orthopterological collections in United States. Paratypes very closely similar to the Holotype with very slight individual variations in the straightness of the lateral carinae of the fastigium and the development of the lateral carinae on the shoulders of the metazona of the pronotum.

*Female paratypes*: 14, 12 from the same locality as the Allotype but collected Sept. 12-13, 1959; 1 female paratype same date and locality as the Allotype; 1 female from the red sand dunes 11 miles south of Hobbs, New Mexico. 1 female from Manahans Sand Hill State Park, Sept. 14, 1959; 2 females same location July 7, 1959. Range in measurement in millimeters: body length 35.5—39.0; length to apices of tegmina 41.4—48.5; pronotum 6.2—7.8 x 4.8—5.2; lateral lobes of the pronotum 6.5—6.2 x 3.8—4.7; tegmina 34.6—39.6; Caudal femora 16.9—19.8 mm. Female Paratypes deposited in the major orthopterological collections and the Tinkham collec-



#### EXPLANATION OF FIGURES

1. *Trimerotropis citrina neomezicana* n. subsp. Lateral view of pronotum of Allotype Female. Mescalero Sands, Chaves Co., New Mexico.
2. *Trimerotropis c. neomezicana* n. subsp. Lateral view of head and pronotum of Holotype Male. Mescalero Sands, Chaves, Co., New Mexico.
3. *Trimerotropis citrina* Scudder. Lateral view of head and pronotum of Male from Dallas, Texas, the Type Locality.

All drawings on the same scale and greatly enlarged. Figures 1, 2, and 3.

tion. Paratype females identical to the Allotype in every respect.

*Orthopteran Associates:* The orthopteran associates of *T. c. neomexicana* are many because the Mescalero Sands support the richest orthopteran fauna of all the numerous sand dune areas of the North American Deserts. The most intimate associates are *Spharagemon collare cristatum* in the blow-outs and more rarely *T. p. salina* and *Xanthippus montanus* and *X. corallipes*.

#### BIBLIOGRAPHY

McNeill, Jerome

1901. Revision of the Orthopteran Genus *Trimerotropis*. *Proc. USNM*, 23(1215):393-449, pl. 21.

Tinkham, Ernest R.

1947. New Species, Records and Faunistic Notes Concerning Orthoptera in Arizona. *American Midland Naturalist*, 38(1):127-149, 4 pls with 32 figs.
1959. Notes on the Self-burial habits of two Nearctic Sand Dune Acridids (Orthoptera). *The Entomologist*, London, 92(1156): 185-188, Fig. 5.
1960. Studies in Nearctic Desert Sand Dune Orthoptera. Part I. A New Species of *Plagiostira* from eastern New Mexico with Key and Notes. *Great Basin Nat.* 20(1 & 2): 39-47, 10 figs.
1960. Studies in Nearctic Desert Sand Dune Orthoptera. Part II. Two New Grasshoppers of the Genus *Trimerotropis* from the Utah Deserts. *Great Basin Nat.*, 20(3 & 4): 49-58, 6 figs.